DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-014779
Date Inspected: 14-Jun-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 1100
OSM Departure Time: 1930
Location: Job Site

CWI Name: See Below

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girders

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Field Splice W1/W2
B). Field Splice W3/W4
C). Field Splice W4/W5

A). Field Splice W1/W2

The QAI observed Chun Fai Tsui ID-3426 perform the repair welding of the areas marked as UT rejects on the longitudinal stiffener Complete Joint Penetration (CJP) groove welds identified as WN: 1W-2W-D-S2. Also at the conclusion of the excavations the QC technician Tom Pasqualone performed a Magnetic Particle Test (MPT) of the excavated area and no rejectable indications were noted. The application and evaluation of the MPT appeared to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The repair welding was performed utilizing the Flux Cored Arc Welding (FCAW-G) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-3000 Repair Rev.0. The WPS was also used by the QC inspector, Mr. Cayabyab as a reference to monitor and verify the Direct Current welding parameters and were noted as 127 amps. The welding was performed in the vertical position (3G) with the work positioned approximately in the vertical plane with the groove approximately vertical and the weld progression up.

The QAI also observed the excavation of the unacceptable discontinuity on the side plate field splice identified as

WN: 1W-2W-C, Segment C2 which was discovered during the Ultrasonic Testing (UT) performed by the QC Technician, Jesse Cayabyab. The excavation was performed by welding personnel Rick Clayborn ID-2773 utilizing a high cycle grinder to remove the defect. At the conclusion of the excavation the QC inspector, Tom Pasqualone, performed a visual inspection and a Magnetic Particle Test of the areas. No reject able indications were noted by the QC inspector and Mr. Clayborn commence the welding of the excavation utilizing the WPS identified as ABF-WPS-D15-1000-Repair Rev. 2. The QAI verified the DCEP welding parameters as 140 amps and the minimum preheat 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The repair welding appeared to comply with the Weld Repair Report No. 201006-005.

B). Field Splice W3/W4

The QAI observed the automatic Flux Cored Arc Welding (FCAW-G) on the "A" face of the weld joint identified as Weld Number (WN) 3W-4W-C, Segment C1. The welding was performed by welding personnel Song Tao Huang, ID-3794 utilizing the WPS ABF-D15-3042A-1 Rev. 0. The joint designation appeared to comply with AWS single-v-groove butt joint identified as B-U2a-G. The WPS was also used by the QC inspector Bernie Docena as a reference to monitor and verify the Direct Current Electrode Positive (DCEP) welding parameters which was noted and recorded by the QAI as follows: 251 amps, 23.0 volts and a travel speed measured as 315mm/ minute. The welding was performed in vertical position (3G) at an approximate incline of 22 degrees. The QAI inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later during the shift the QAI observed, at random intervals, the QC inspector monitoring the in process welding, the surface temperatures and verifying the DCEP welding parameters.

C). Field Splice W4/W5

The QAI observed the QC technician Steve McConnell perform a Magnetic Particle Test (MPT) on the deck plate field splice identified as WN: 4W-5W-A . The testing was performed by the QC technician utilizing the UT Procedure identified as SE-MT-D1.5-CT-100 Rev.4. The QC technician performed the required longitudinal and the transverse technique during the testing which was performed utilizing a Parker Probe identified as DA-400 . The MPT of the field splice was completed during this shift and no rejectable indications were noted by QC.

Later in the shift the QAI observed Mr. McConnell commence the Ultrasonic Testing (UT) of the field splice utilizing the procedure identified as SE-UT-D1.5-CT-100 Rev.4. The QC technician UT'd approximately 300mm starting from the north end of the splice, segment A1, and noted rejectable indications with a magnitude of 0 decibels with a length equal to approximately 300mm. The technician utilized a G.E./Krautkramer USM 35X during the examination with a 2.25 megahertz transducer mounted a 70 degree wedge.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector's and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW and FCAW-G processes appeared to comply with the AWS Specification and AWS Classification. The

WELDING INSPECTION REPORT

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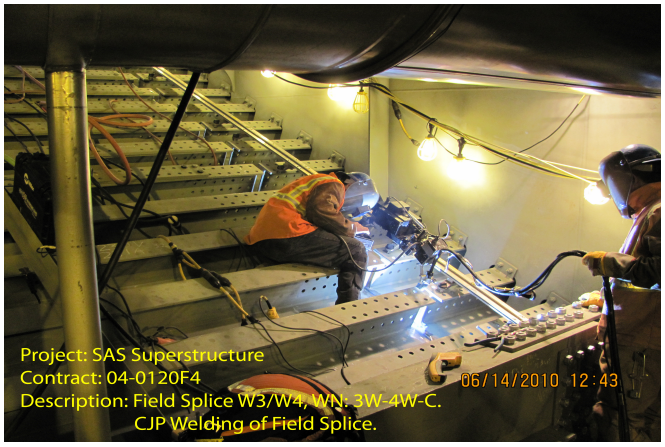
QC inspection, testing and welding performed on this shift was not completed, except as noted, appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs, below, illustrate the work observed during this scheduled shift.



Summary of Conversations:

There were no pertinent conversations were discussed in regards to the project.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer